# Wonderware® FactorySuite™

## Recipe Manager User's Guide

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**Invensys Systems, Inc.**

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C H A P T E R 1

# Introduction to Recipe Manager

In the manufacturing world a recipe is used to describe many different things. For example, a bakery may have a basic cookie dough recipe that lists all of the ingredients required to make plain cookies and all of the optional ingredients such as nuts, fruit, chocolate chips, and so on, that can be added to the basic recipe to make various kinds of cookies. In a steel mill, a recipe might be a collection of machine setup parameters. For batch processors, a recipe can be used to describe the various steps in the batch process. InTouch Recipe Manager, combined with the basic InTouch QuickScript functions, can handle all of these situations.

The Wonderware Recipe Manager add-on product consists of two components; Recipe Manager and a set of recipe functions. Recipe Manager is a separate executable program that is used to create recipe template files. The recipe functions are used in InTouch QuickScripts to access the recipe template files. The recipe functions allow InTouch to select, load, modify, create and delete the recipes contained in the recipe template files.

## Contents


- About this Manual
- Technical Support
- Your FactorySuite License
- The Recipe Manager Program
- Running Recipe Manager


# About this Manual

This manual is divided into a series of logical building block chapters that describe the various aspects of building Recipe Templates. It is written in a "procedural" format that tells you in numbered steps how to perform most functions or tasks.

If you are viewing this manual online, when you see text that is green, click the text to "jump" to the referenced section or chapter. When you jump to another section or chapter and you want to come back to the original section, a "back" option is provided.

**Tip** These are "tips" that tell you an easier or quicker way to accomplish a function or task.

The *InTouch User's Guide* will help you familiarize yourself with the WindowMaker development environment and its tools (read Chapter 1, "WindowMaker Program Elements.") To learn about working with windows, graphic objects, wizards, ActiveX controls and so on, read Chapter 2, "Using WindowMaker." To learn more about writing InTouch QuickScripts, read Chapter 06, "Creating QuickScripts in InTouch."

In addition, the *InTouch Reference Guide* provides you with an in-depth reference to the InTouch QuickScript language and functions, system tagnames, and tagname **.fields**.

For details on the runtime environment (WindowViewer), see your online *InTouch Runtime User's Guide*.

For details on the add-on program, SPCPro, see your *SPC Pro User's Guide.*

For details on the add-on program, SQL Access Manager, see your *SQL Access Manager User's Guide*.

The *FactorySuite Systems Administrator's Guide* also provides you with complete information on the common components in the FactorySuite, system requirements, networking considerations, product integration, technical support, and so on.

Online manuals are also included in your FactorySuite software package for all FactorySuite components.

**Note** You must install the Adobe Acrobat Reader (version 4.0 or later) to view or print the online manuals.

## Assumptions

This manual assumes you are:

- Familiar with the Windows 2000 and/or Windows NT operating system working environment.
- Knowledgeable of how to use of a mouse, Windows menus, select options, and accessing online Help.
- Experienced with a programming or macro language. For best results, you should have an understanding of programming concepts such as variables, statements, functions and methods.

# Technical Support

Wonderware offers a variety of support options to answer any questions on Wonderware products and their implementation.

Prior to contacting technical support, please refer to the relevant chapter(s) in your *User's Guide* for a possible solution to any problem you may have with using *Recipe Manager.* If you find it necessary to contact technical support for assistance, please have the following information available:

1. Your software serial number.
2. The version of InTouch you are running.
3. The type and version of the operating system you are using. For example, Microsoft Windows NT Version 4.0 workstation.
4. The exact wording of system error messages encountered.
5. Any relevant output listing from the Wonderware Logger, the Microsoft Diagnostic utility (MSD), or any other diagnostic applications.
6. Details of the attempts you made to solve the problem(s) and your results.
7. Details of how to recreate the problem.
8. If known, the Wonderware Technical Support case number assigned to your problem (if this is an on-going problem).

For more information on Technical Support, see your online *FactorySuite System Administrator's Guide*.

# Your FactorySuite License

Your FactorySuite system license information can be viewed through the license viewing utility that is launched from the WindowMaker Help **About** dialog box.

### To open license utility program

1. On the WindowMaker **Help** menu, select the **About** command.
2. Click **View License**. The **License Utility - LicView** dialog box appears.

For more information on the licensing viewing utility, see your *FactorySuite System Administrator's Guide*.

# The Recipe Manager Program

The Recipe Manager program is a spreadsheet-like user interface that you use to create and maintain recipe template files. While the recipe template files can be created using any spreadsheet or word processor program, the Recipe Manager makes the creation task easier and less error prone by providing you with shortcuts and an orderly means for creating recipe template files.

## Recipe Template Files

All recipes are defined and stored in the recipe template files. These files contain the following information:

- All ingredient names and their data types that can be used in a recipe.
- Unit Names that associate InTouch tagnames with recipe ingredient values.
- Recipe Names containing the quantities or values for each ingredient used in a recipe instance.

A recipe template file consists of the following three templates:

## Template Definition

You will use the Template Definition to define all ingredients that are contained in a recipe. A data type is required for each recipe ingredient. The data type can be Analog, Discrete or Message. The ingredient names are arbitrary and do not have to be InTouch tagnames.

## Unit Definition

You will use the Unit Definition template to associate InTouch tagnames with recipe ingredients. Many different loading definitions can be created. These definitions are called *units*. The **RecipeLoad()** function uses these definitions to load specific instances of the recipe to the associated InTouch tagnames. A Unit Definition may consist of all ingredient names or just a subset.

**Note** The tagnames defined for the unit may be Memory types that can be viewed and/or edited in an InTouch window or I/O types that can be loaded directly to PLCs.

Each recipe template file is saved in the .CSV (Comma Separated Variable) file format. Therefore, you can create, open or edit your recipe template definitions in any application that supports the .csv format. For example, Notepad or Microsoft® Excel®.

## Recipe Definition

You will use the Recipe Definition template to define Recipe Names for each instance of a recipe and, the quantity required for each ingredient used in the instance. Recipe instances can be modified, created or deleted in runtime through the recipe functions.

# Running Recipe Manager

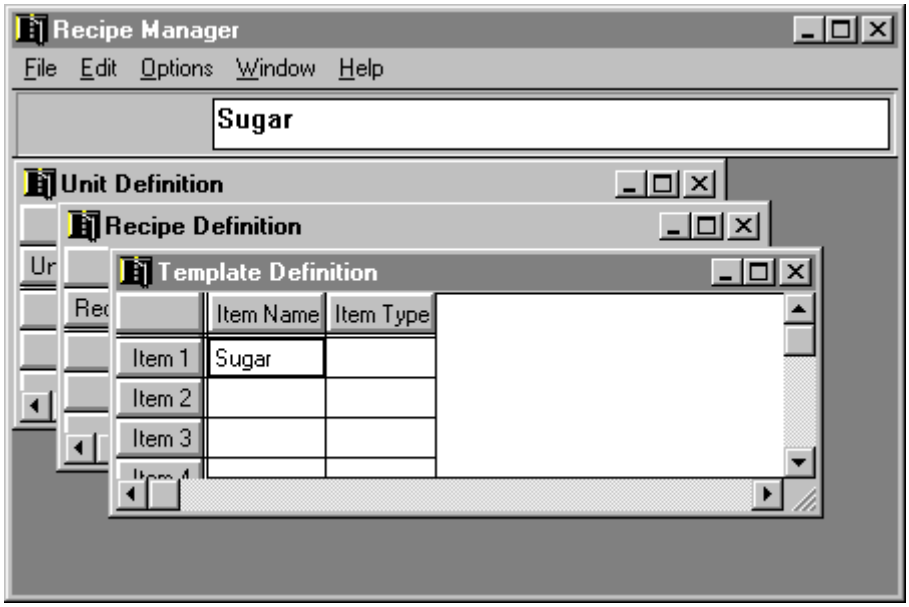
Recipe Manager is an add-on program for Wonderware InTouch. When you install Recipe Manager, it is automatically added to the Application Explorer in WindowMaker. Therefore, you can run the Recipe Manager program from within WindowMaker.

For more information on the Application Explorer, see your *InTouch User's Guide*.

### To run Recipe Manager

1. Run InTouch WindowMaker, in the Application Explorer, click **Applications**, then double-click **Recipe Manager**.

2. On the **File** menu, click **New**. The three Recipe Manager templates appear.




## Recipe Template Common Features

The three templates have the following common features:

| Feature | Description |
|---|---|
| **Input Box** | Text input box used to type the data for the selected cell<br><br>**Tip** When a cell is selected, its contents is displayed in the text input box. |
| **Select/Auto-Size Template** | Click once to select the entire template. Double-click to auto-size all columns in the template to the width of the longest entry. |
| **Select/Auto-Size Column** | Click once to select the entire column. Double-click to auto-size the column to the width of its longest entry.<br><br>**Note** The **Item Type** column in the **Template Definition** template cannot be auto-sized. |
| **Select Row** | Selects the respective row. |

C H A P T E R 2

# Using Recipe Manager

Recipe Manager uses three different templates to create recipes. You can configure your preferences for the templates. This chapter describes the procedures you will use to configure your recipe template preferences and the procedures you will use to create recipes.

## Contents

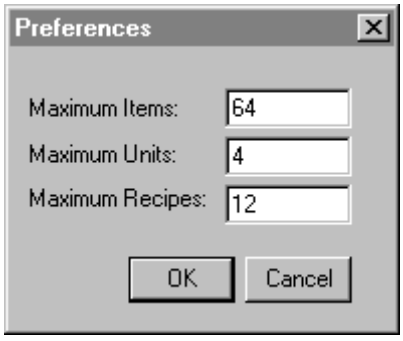

- Configuring the Recipe Template Preferences
- Creating a New Recipe Template File
- Editing a Recipe Template File


# Configuring the Recipe Template Preferences

Before you begin to define your recipes, you need to configure the preferences for the recipe template default values. When you configure the preferences, you will specify the maximum number of items, units and recipe names in each recipe template.

### To configure preferences

1. On the **Options** menu, click **Preferences**. The **Preferences** dialog box appears.




2. In the **Maximum Items** box, type the number of item names you want to allow in your **Template Definition** template.
3. In the **Maximum Units** box, type the number of units you want to allow in your **Unit Definition** template.

4. In the **Maximum Recipes** box, type the number recipe names you want to allow in your **Recipe Definition** template.

**Tip** The above three entries may have a value up to 9999. However, the larger the number the more it will impact your system response time.

5. Click **OK**.

**Caution!** The values you set in the **Preferences** dialog box are applied to all recipe template files that you create. When you modify these values, all your existing recipe template files are also modified.

### To turn on the Auto Down on [Enter] key functionality:

On the **Options** menu, click **Auto Down on [Enter]**.

**Tip** The **Auto Down on [Enter]** option simplifies the data entry process in the recipe templates. When you turn this option on, after each entry in your template, you can press the ENTER key to move the cursor down to the next cell in that same column.

### To turn off the Auto Down on [Enter] key functionality:

On the **Options** menu, click **Auto Down on [Enter]** again.

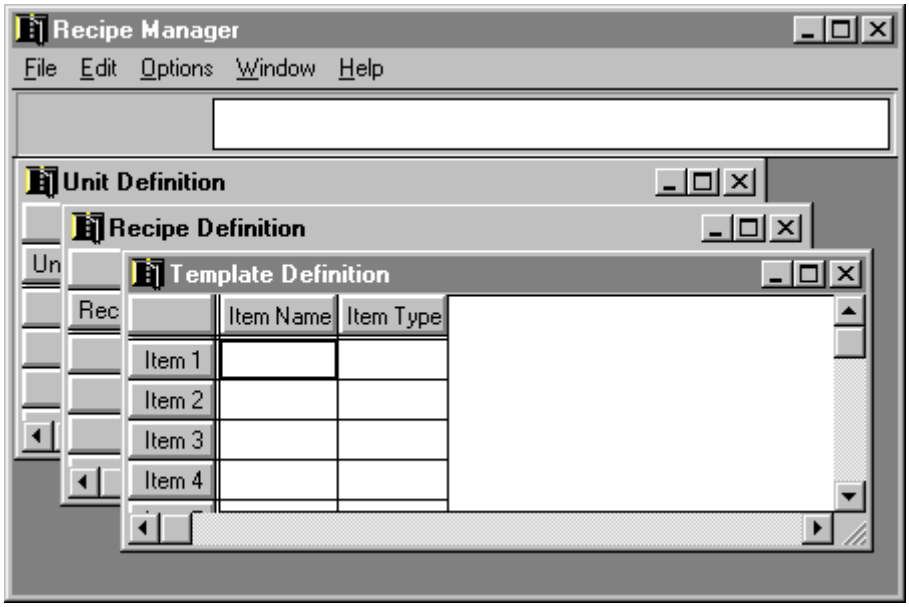
# Creating a New Recipe Template File

When creating a recipe template file, you use the following three templates:

| Template | Description |
|---|---|
| **Template Definition** | Used to define all of the ingredients in a recipe. A data type is required for each recipe ingredient. The data type can be; Analog, Discrete or Message. |
| **Unit Definition** | Used to associate InTouch tagnames with recipe ingredients. You can create many different *unit* definitions. The Recipe Manager **RecipeLoad()** QuickScript function uses these definitions to load specific instances of your recipe to various InTouch tagnames. A **Unit Definition** can consist of all ingredient names or just a subset. |
| **Recipe Definition** | Defines the names for each recipe and the quantity required for each recipe ingredient used. |

### To define a Template Definition

1. On the **File** menu, click **New**. The three Recipe Manager templates appear.




**Tip** If you right click the text input, a menu appears displaying the commands that you can apply to the selected text.

2. Click the **Template Definition** template's title bar to activate it and bring it to the front of the window.
3. In the **Item Name** column cells, type an arbitrary name for each recipe ingredient.

**Tip** You can only type one ingredient per cell. If your ENTER key has been set to **Auto down on [Enter]**, then press the ENTER key after each ingredient is typed to move down to the next cell.

4. In the **Item Type** column cells, type a valid item type for the respective recipe ingredient.

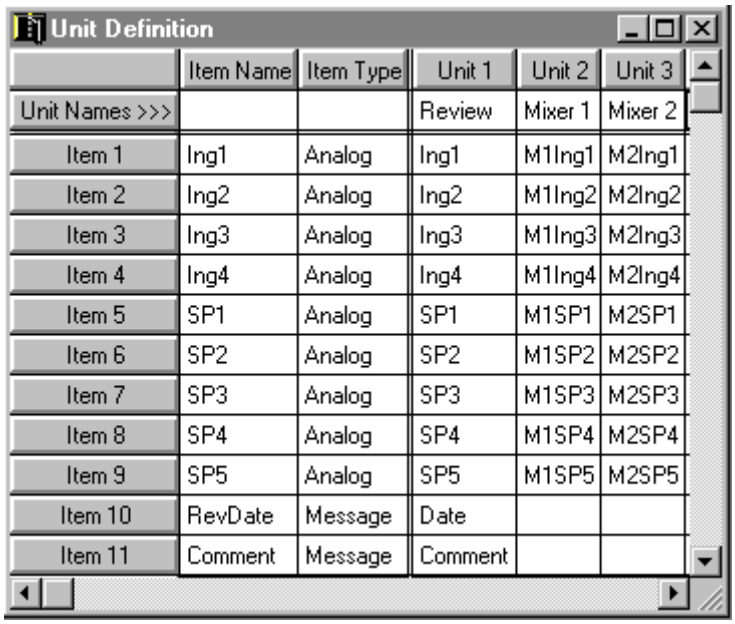
   The valid item types are; Analog, Discrete or Message. You need only to type the first letter of the type in the cell then press ENTER. Recipe Manager will automatically fill the rest in for you.

**Note** Regardless of which language version you are working in, always type "A" in the Item Type column cell to get "Analog", always type "D" to get "Discrete" and always type "M" to get "Message."

### To define a Unit Definition

1. Click the **Unit Definition** template's title bar to activate it and bring it to the front of the window.

**Tip** The **Unit Definition** template displays the **Item Name** and **Item Type** information from the previously entered **Template Definition** template.




| | Item Name | Item Type | Unit 1 | Unit 2 | Unit 3 |
|---|---|---|---|---|---|
| Unit Names >>> | | | Review | Mixer 1 | Mixer 2 |
| Item 1 | Ing1 | Analog | Ing1 | M1Ing1 | M2Ing1 |
| Item 2 | Ing2 | Analog | Ing2 | M1Ing2 | M2Ing2 |
| Item 3 | Ing3 | Analog | Ing3 | M1Ing3 | M2Ing3 |
| Item 4 | Ing4 | Analog | Ing4 | M1Ing4 | M2Ing4 |
| Item 5 | SP1 | Analog | SP1 | M1SP1 | M2SP1 |
| Item 6 | SP2 | Analog | SP2 | M1SP2 | M2SP2 |
| Item 7 | SP3 | Analog | SP3 | M1SP3 | M2SP3 |
| Item 8 | SP4 | Analog | SP4 | M1SP4 | M2SP4 |
| Item 9 | SP5 | Analog | SP5 | M1SP5 | M2SP5 |
| Item 10 | RevDate | Message | Date | | |
| Item 11 | Comment | Message | Comment | | |

2. In the **Unit Names**>>> row (in the cell below each unit column heading (**Unit 1, Unit 2,** and so on)), type the name for each unit that you want to define.

**Tip** You can use the scroll bars on the template to scroll through the recipe data. The **Item Name** and **Item Type** columns do not move. Therefore, the master recipe information remains visible as recipe instances are added.

3. In the **Unit #** column cells, type the InTouch tagname for each respective recipe ingredient in the **Item Name** column.

**Tip** If WindowMaker is running, double-click the cell to display the Tag Browser. WindowMaker **MUST** be running in order to access the Tag Browser.

4. Double-click the desired tagname from the Tag Browser to insert it into the cell or select it, and then click **OK**.

**Tip** The tagnames defined for a unit can be Memory type tagnames that can be viewed or edited in an InTouch window or, they can be DDE type tagnames that are loaded directly into PLCs.

For more information on the Tag Browser, see your *InTouch User's Guide*.

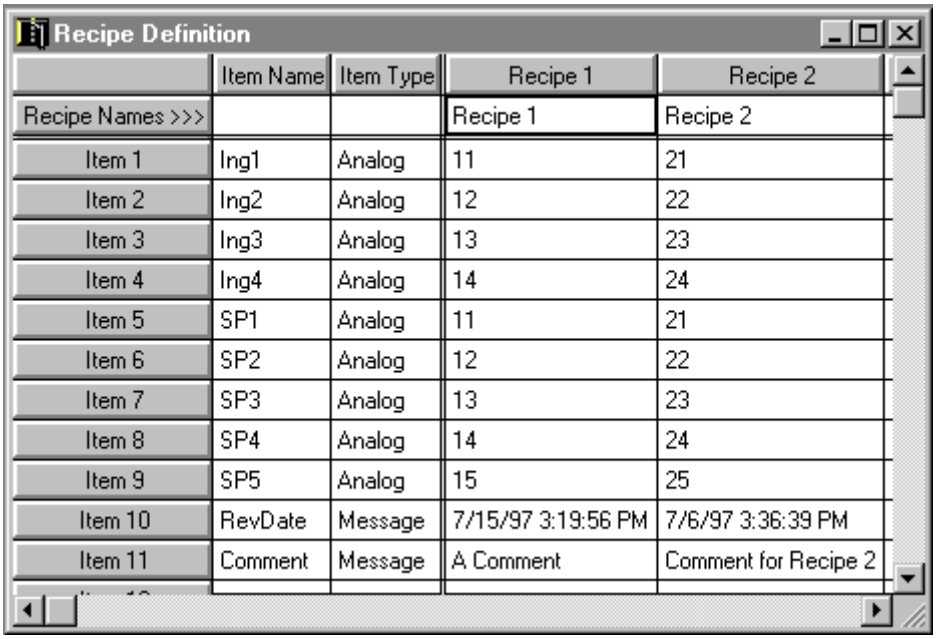
5. Repeat this procedure for each Unit Name.

**Note** When you use the **RecipeLoad()** function in an InTouch QuickScript, you must specify a Recipe Name and a Unit Name. The values contained in that Recipe Name definition are then loaded into the tagnames specified in the Unit Name when the QuickScript executes.

### To define a Recipe Definition

1. Click the **Recipe Definition** template's title bar to activate it and bring it to the front of the window. If it is not accessible, use your **Window** menu option to select the template.

**Tip** The **Recipe Definition** template displays the **Item Name** and **Item Type** information from the previously defined **Template Definition** template.




| | Item Name | Item Type | Recipe 1 | Recipe 2 |
|---|---|---|---|---|
| Recipe Names >>> | | | Recipe 1 | Recipe 2 |
| Item 1 | Ing1 | Analog | 11 | 21 |
| Item 2 | Ing2 | Analog | 12 | 22 |
| Item 3 | Ing3 | Analog | 13 | 23 |
| Item 4 | Ing4 | Analog | 14 | 24 |
| Item 5 | SP1 | Analog | 11 | 21 |
| Item 6 | SP2 | Analog | 12 | 22 |
| Item 7 | SP3 | Analog | 13 | 23 |
| Item 8 | SP4 | Analog | 14 | 24 |
| Item 9 | SP5 | Analog | 15 | 25 |
| Item 10 | RevDate | Message | 7/15/97 3:19:56 PM | 7/6/97 3:36:39 PM |
| Item 11 | Comment | Message | A Comment | Comment for Recipe 2 |

2. In the **Recipe Names**>>> row (in the cell below each recipe column heading (**Recipe 1, Recipe 2,** and so on)), type the name for each recipe that you want to define.

**Tip** You can use the scroll bars on the template to scroll through the recipe data. The **Item Name** and **Item Type** columns do not move. Therefore, the master recipe information remains visible as recipe instances are added.

3. In the **Recipe #** column cells, type the values for each respective recipe ingredient in the **Item Name** column.

**Tip** These values are loaded into the InTouch tagnames when the **RecipeLoad()** function is executed in an InTouch QuickScript.

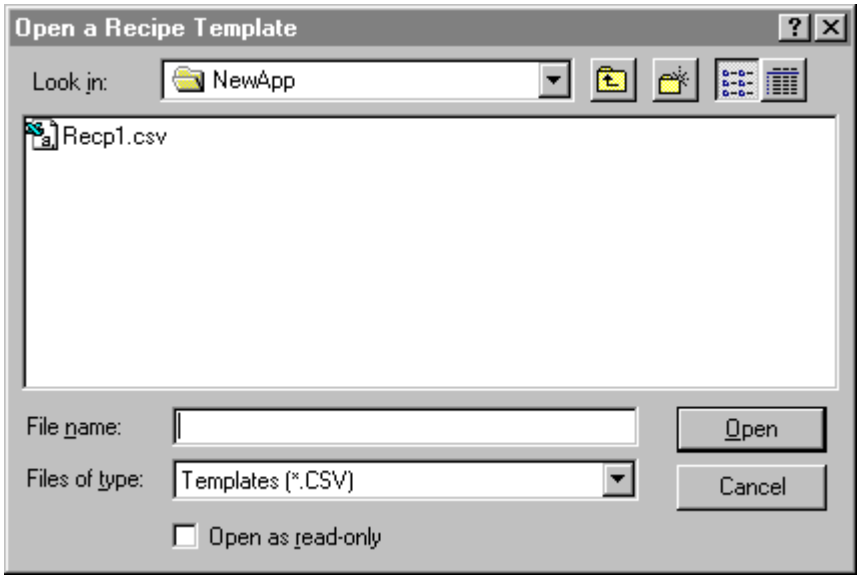
The InTouch recipe functions portion of this program reads and writes directly to the recipe template file. Therefore, the Recipe Manager program does not need to be running in order for the recipe functions to execute properly in InTouch QuickScripts.

**Caution!** If the recipe template file is being used by InTouch, any new recipes you create or any changes you make to existing recipes cannot be written to the recipe template file. Recipe Manager only creates recipe template files. Once they have been created, the Recipe Manager should be closed.

4. On the **File** menu, click **Save** to save your recipe template file.

### To open an existing recipe template file

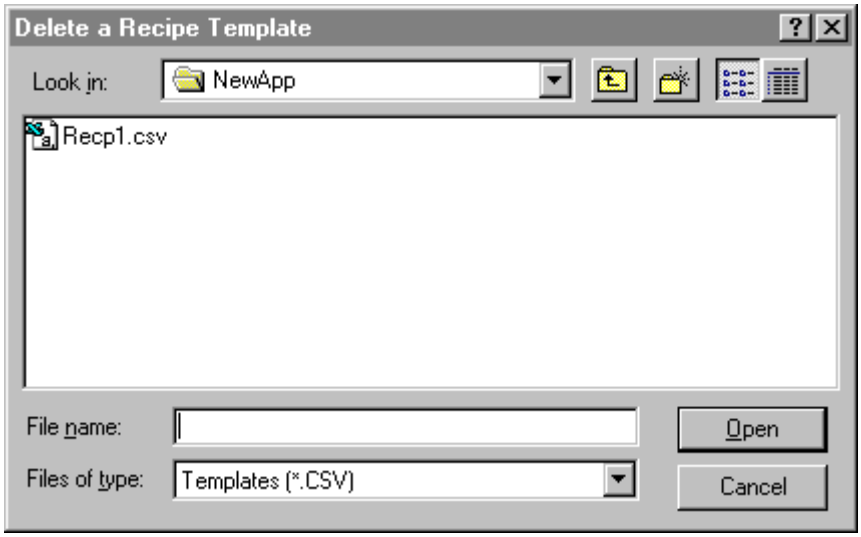
1. On the **File** menu, click **Open**. The **Open a Recipe Template** dialog box appears.




2. Locate and select the Recipe .CSV file, then click **Open** or, double-click the file name. The three recipe templates in the file appear.

### To delete a recipe template file

1. On the **File** menu, click **Delete**. The **Delete a Recipe Template** dialog box appears.




2. Locate and select the recipe .CSV file then, click **Open** or, double-click the file name. A message box appears asking you to confirm the deletion.

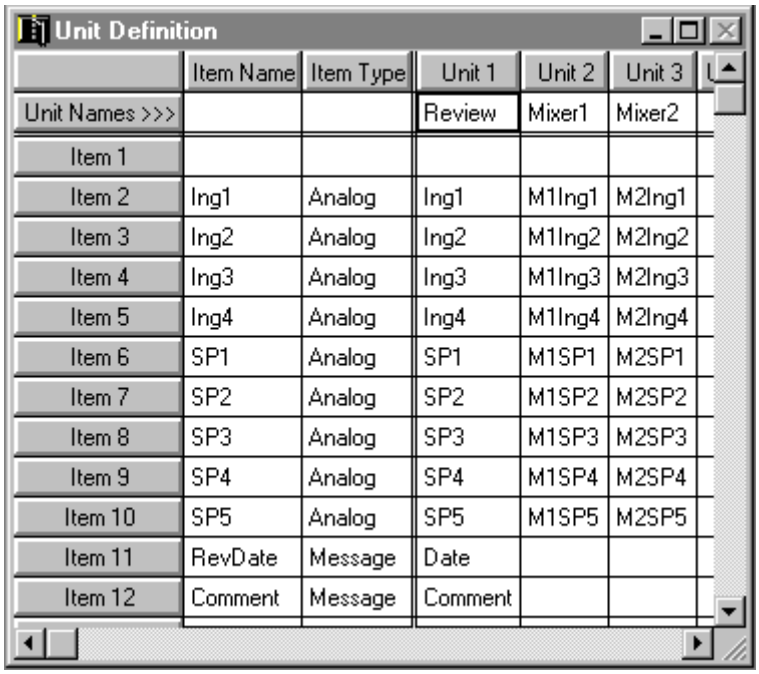
**Note** Open recipe template files cannot be deleted.

# Editing a Recipe Template File

There are several ways to edit an existing recipe template file. One of the easiest ways is by using the **Edit** menu commands. These commands allow you to clear, fill, insert or delete a single selected cell or a range of selected cells within your recipe template file.

### To clear a range of cells

1. Select the range of data.




| | Item Name | Item Type | Unit 1 | Unit 2 | Unit 3 |
|---|---|---|---|---|---|
| Unit Names >>> | | | Review | Mixer1 | Mixer2 |
| Item 1 | | | | | |
| Item 2 | Ing1 | Analog | Ing1 | M1Ing1 | M2Ing1 |
| Item 3 | Ing2 | Analog | Ing2 | M1Ing2 | M2Ing2 |
| Item 4 | Ing3 | Analog | Ing3 | M1Ing3 | M2Ing3 |
| Item 5 | Ing4 | Analog | Ing4 | M1Ing4 | M2Ing4 |
| Item 6 | SP1 | Analog | SP1 | M1SP1 | M2SP1 |
| Item 7 | SP2 | Analog | SP2 | M1SP2 | M2SP2 |
| Item 8 | SP3 | Analog | SP3 | M1SP3 | M2SP3 |
| Item 9 | SP4 | Analog | SP4 | M1SP4 | M2SP4 |
| Item 10 | SP5 | Analog | SP5 | M1SP5 | M2SP5 |
| Item 11 | RevDate | Message | Date | | |
| Item 12 | Comment | Message | Comment | | |

2. On the **Edit** menu, click **Clear**. A message box appears asking you to confirm the clearing of the selected range of cells.
3. Click **Yes**. The data is now cleared from the selected range.

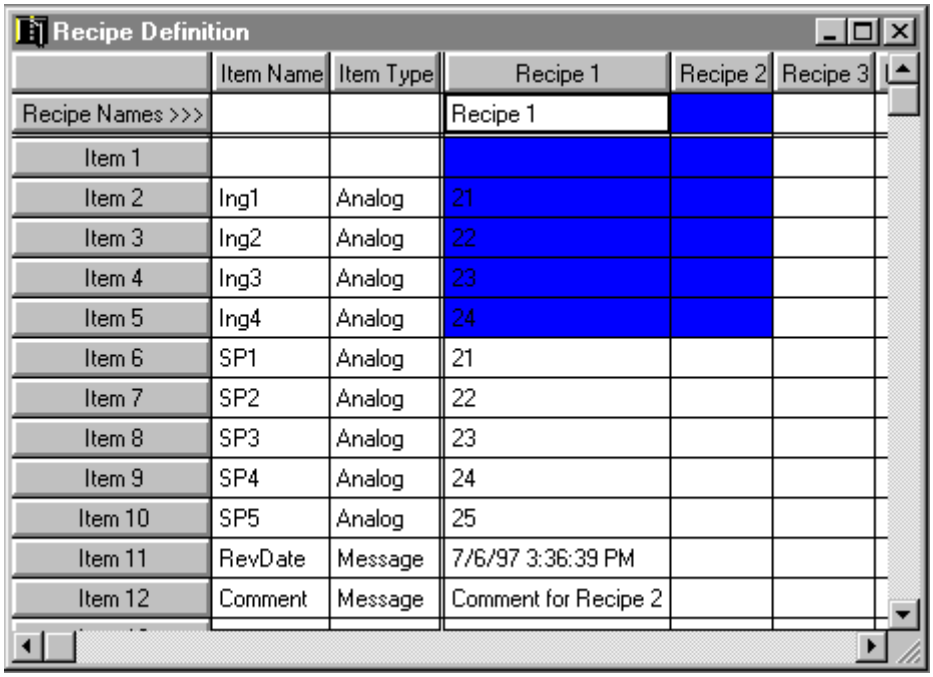
### To fill right, down, left or up

These commands are used to copy data in a range of selected cells to an adjacent range of selected cells.

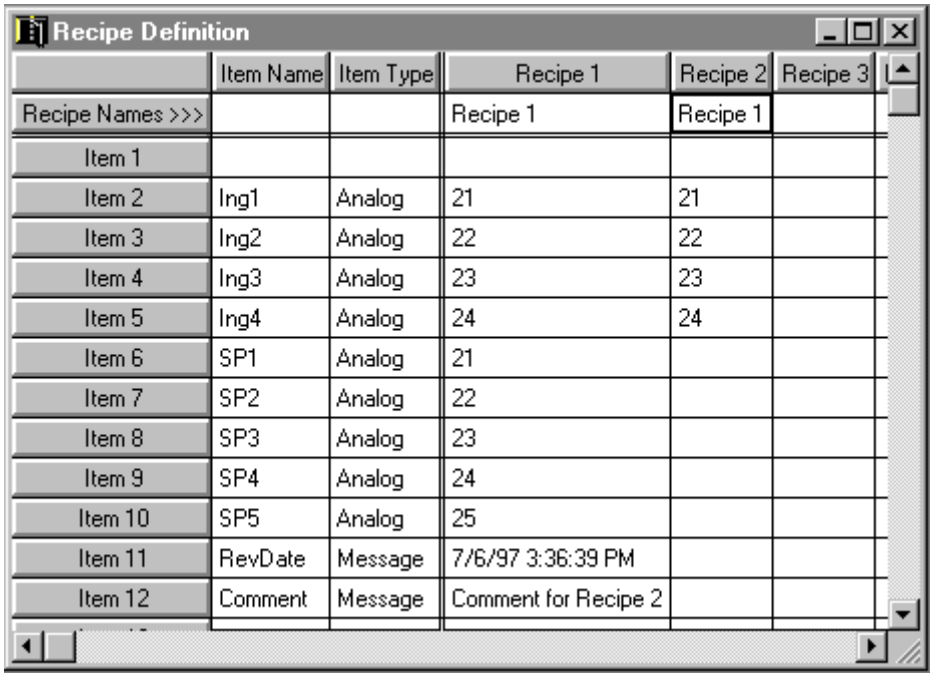
1. Select the cell or the range of cells to be copied. Next, select the adjacent range of cells that you want to copy the data into. (Either to the left, right, above or below).

**Tip** The selected ranges must be the same size.

2. On the **Edit** menu, select the appropriate fill command. The data is copied to the selected range of cells.


Recipe Definition
Item Name
Item Type
Recipe 1
Recipe 2
Recipe 3
Recipe Names >>>
Recipe 1
Item 1
Item 2 Ing1 Analog 21
Item 3 Ing2 Analog 22
Item 4 Ing3 Analog 23
Item 5 Ing4 Analog 24
Item 6 SP1 Analog 21
Item 7 SP2 Analog 22
Item 8 SP3 Analog 23
Item 9 SP4 Analog 24
Item 10 SP5 Analog 25
Item 11 RevDate Message 7/6/97 3:36:39 PM
Item 12 Comment Message Comment for Recipe 2

3. On the **Edit** menu, point to **Fill Right**, the selected data will automatically fill to the right.

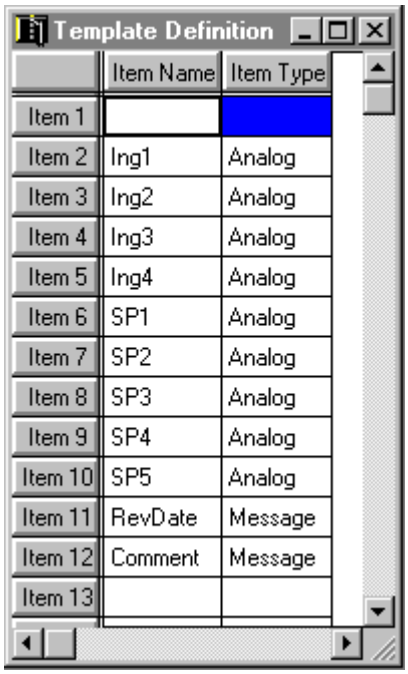

Recipe Definition
Item Name
Item Type
Recipe 1
Recipe 2
Recipe 3
Recipe Names >>>
Recipe 1
Recipe 1
Item 1
Item 2 Ing1 Analog 21 21
Item 3 Ing2 Analog 22 22
Item 4 Ing3 Analog 23 23
Item 5 Ing4 Analog 24 24
Item 6 SP1 Analog 21
Item 7 SP2 Analog 22
Item 8 SP3 Analog 23
Item 9 SP4 Analog 24
Item 10 SP5 Analog 25
Item 11 RevDate Message 7/6/97 3:36:39 PM
Item 12 Comment Message Comment for Recipe 2

**Tip** If the new column that the data was copied to, is not big enough to accommodate the largest entry, simply double-click on the column heading to change the width to the longest entry.

### To insert a row

You can insert rows in the **Template Definition** template.

1. Click the **Item #** to select the row in the **Template Definition** that you want to insert a new row above.
2. On the **Edit** menu, click **Insert**. A new row will be inserted above the row you selected.




**Note** If the maximum values configured for the Recipe Manager **Preferences** have been reached, this command will not be active. You must close the current template file then, on the **Options** menu, click **Preferences**. The **Preferences** dialog box appears. Increase the numbers specified to add Items/Units/ Recipes to your recipe template file.

When you modify the **Preferences**, the changes will be applied to all existing recipe template files.

3. All subsequent rows will automatically be renumbered.

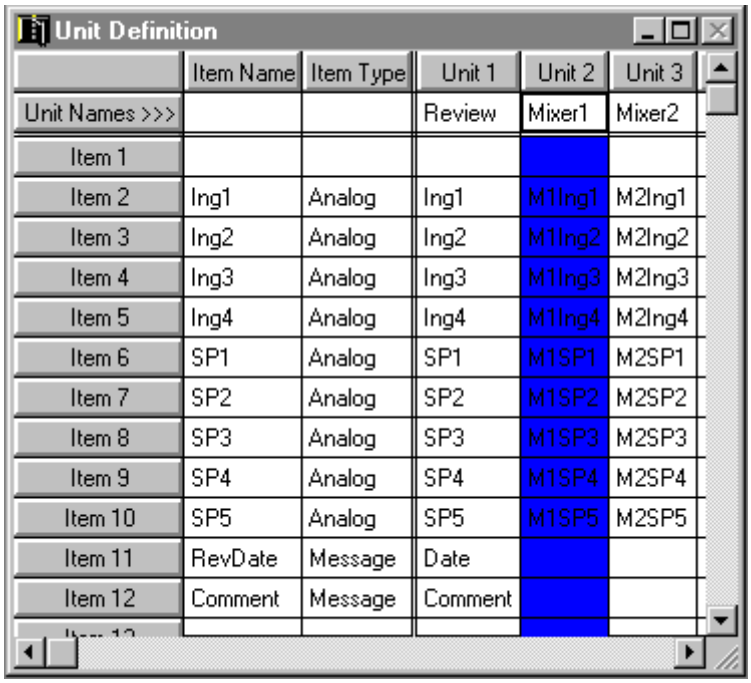
**Tip** All insertions and deletions in the **Template Definition** will automatically be reflected in the **Recipe Definition** and **Unit Definition** templates as well.

**Note** You cannot insert rows in either the **Recipe Definition** or **Unit Definition** templates.

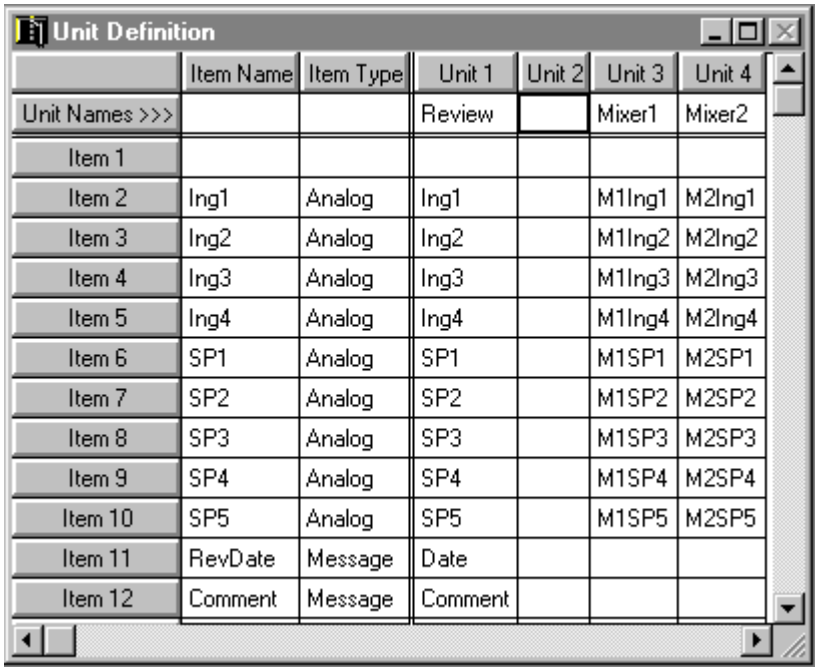
### To insert a column

You can insert columns in the **Recipe Definition** or **Unit Definition** template.

1. Click the **Unit #** to select the column in the **Unit Definition** that you want to insert a new column next to.
2. On the **Edit** menu, click **Insert**. A new column will be inserted next to the column you selected.


Unit Definition
Item Name
Item Type
Unit 1
Unit 2
Unit 3
Unit Names >>>
Review
Mixer1
Mixer2
Item 1
Item 2 Ing1 Analog Ing1 M1Ing1 M2Ing1
Item 3 Ing2 Analog Ing2 M1Ing2 M2Ing2
Item 4 Ing3 Analog Ing3 M1Ing3 M2Ing3
Item 5 Ing4 Analog Ing4 M1Ing4 M2Ing4
Item 6 SP1 Analog SP1 M1SP1 M2SP1
Item 7 SP2 Analog SP2 M1SP2 M2SP2
Item 8 SP3 Analog SP3 M1SP3 M2SP3
Item 9 SP4 Analog SP4 M1SP4 M2SP4
Item 10 SP5 Analog SP5 M1SP5 M2SP5
Item 11 RevDate Message Date
Item 12 Comment Message Comment

3. On the **Edit** menu, click **Insert**. A new blank column will be inserted to the left of the selected column.


Unit Definition
Item Name
Item Type
Unit 1
Unit 2
Unit 3
Unit 4
Unit Names >>>
Review
Mixer1
Mixer2
Item 1
Item 2 Ing1 Analog Ing1 M1Ing1 M2Ing1
Item 3 Ing2 Analog Ing2 M1Ing2 M2Ing2
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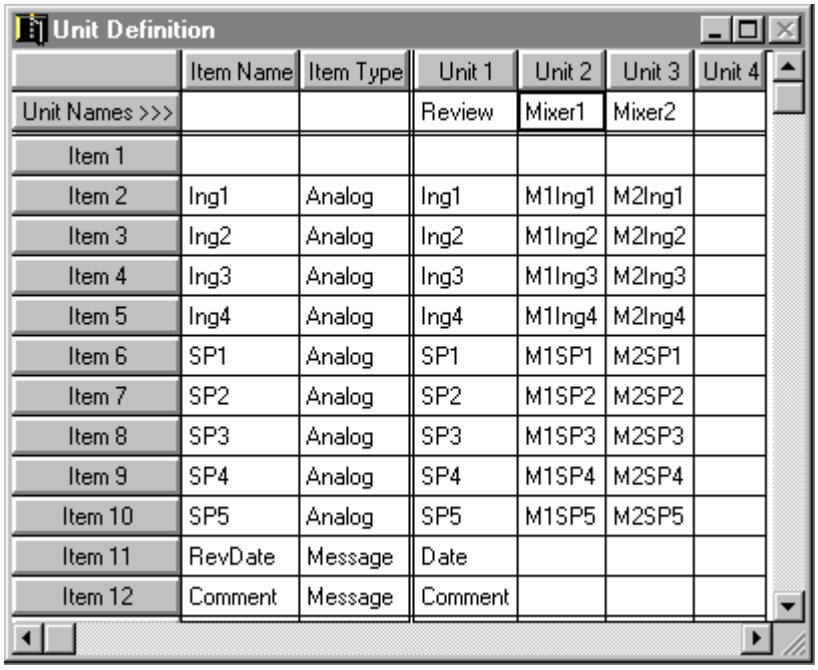
Item 7 SP2 Analog SP2 M1SP2 M2SP2
Item 8 SP3 Analog SP3 M1SP3 M2SP3
Item 9 SP4 Analog SP4 M1SP4 M2SP4
Item 10 SP5 Analog SP5 M1SP5 M2SP5
Item 11 RevDate Message Date
Item 12 Comment Message Comment

**Tip** In this example, notice that the Mixer 1 data has now moved to the Unit 3 column and a blank column has been inserted as Unit 2.

### To delete a column

You can delete columns from the **Recipe Definition** or **Unit Definition** templates.

1. Click the **Unit #** column heading to select the column that you want to delete.




| | Item Name | Item Type | Unit 1 | Unit 2 | Unit 3 | Unit 4 |
|---|---|---|---|---|---|---|
| Unit Names >>> | | | Review | Mixer1 | Mixer2 | |
| Item 1 | | | | | | |
| Item 2 | Ing1 | Analog | Ing1 | M1Ing1 | M2Ing1 | |
| Item 3 | Ing2 | Analog | Ing2 | M1Ing2 | M2Ing2 | |
| Item 4 | Ing3 | Analog | Ing3 | M1Ing3 | M2Ing3 | |
| Item 5 | Ing4 | Analog | Ing4 | M1Ing4 | M2Ing4 | |
| Item 6 | SP1 | Analog | SP1 | M1SP1 | M2SP1 | |
| Item 7 | SP2 | Analog | SP2 | M1SP2 | M2SP2 | |
| Item 8 | SP3 | Analog | SP3 | M1SP3 | M2SP3 | |
| Item 9 | SP4 | Analog | SP4 | M1SP4 | M2SP4 | |
| Item 10 | SP5 | Analog | SP5 | M1SP5 | M2SP5 | |
| Item 11 | RevDate | Message | Date | | | |
| Item 12 | Comment | Message | Comment | | | |

2. On the **Edit** menu, click **Delete**. A confirmation message dialog box appears asking you to confirm the deletion.
3. Click **Yes**. The column is now deleted from the template.

**Tip** In this example, when the Unit2 column is deleted, the Mixer 2 data in Unit 3 will move to the Unit 2 column.

### To delete a row

You can delete rows from the **Template Definition** template.

1. Click the **Item #** row header to select the row that you want to delete. For example:
2. On the **Edit** menu, click **Delete**. A confirmation message dialog box appears asking you to confirm the deletion.
3. Click **Yes**. The row is now deleted from the template.

**Tip** For example, in the above dialog, if the Item 1 row was deleted, the data in Item 2 row would move to the Item 1 row.

C H A P T E R 3

# Using Recipe Functions

InTouch uses recipe functions to interact with your recipe template files. These functions are an extension of the standard InTouch QuickScript functions and can be used in any script. They allow you to select, modify, insert or delete records in your existing recipe template file from your InTouch recipe application.

## Contents


- Recipe Functions
- Recipe Arguments
- Using Recipe Functions
- Nesting Recipes
- Applying Security to Recipes


# Recipe Functions

This section lists each Recipe Function. The general format of the recipe functions is as follows:

```
RecipeFunction(Argument1, Argument2,...,ArgumentN)
```

For complete details on each Recipe function and examples of how you use each, see your *InTouch Reference Guide.*

| Function | Description |
|---|---|
| **RecipeDelete** | This function is used to delete currently defined Recipe names from the specified recipe template file. |
| **RecipeGetMessage** | This function is used to write an executed function's error code to an analog tagname and the corresponding error code message to a message tagname.<br><br>For more information on displaying error code messages, see Chapter 4, "Troubleshooting Recipe Functions." |

| Function | Description |
|---|---|
| **RecipeLoad** | This function is used to load a specific recipe to a specific unit of tagnames.<br><br>For more information on tags, see the *InTouch User's Guide*. |
| **RecipeSave** | This function is used to save a newly created recipe or to save changes made to an existing recipe to the specified recipe template file. |
| **RecipeSelectNextRecipe** | This function is used to select the next recipe name currently defined in the recipe template file. |
| **RecipeSelectPreviousRecipe** | This function is used to select the previous recipe name currently defined in the recipe template file. |
| **RecipeSelectRecipe** | This function is used to select a specific recipe name currently defined in the recipe template file. |
| **RecipeSelectUnit** | This function is used to select the unit of tagnames to which the current recipe values will be loaded.<br><br>For more information on combining functions, see "Combining Recipe Functions." |

# Recipe Arguments

The following describes the arguments required for each recipe function. When a argument is entered in a script surrounded by quotation marks, for example, "Argument1", that exact text will be used. If no quotation marks are used, Argument1 is assumed to be a tagname and the system will access the InTouch tagname directory for the value of the tagname, Argument1.

The arguments to the recipe functions will be one or more of the following:

| Argument | Description |
|---|---|
| **FileName** | This argument is the name of the recipe template file that will be acted upon by the function. The *FileName* can be a string constant or an InTouch tagname that is a I/O or memory-type tagname. |
| **RecipeName** | This argument is the name of the specific recipe in the designated recipe template file to be used by the function. The **RecipeLoad()**, **RecipeSave()** and **RecipeDelete()** functions require the user to provide the *RecipeName*. The **RecipeSelectRecipe()** function returns a value to this argument. The ***RecipeName*** can be a string constant or an InTouch tagname that is a I/O or memory-type tagname. |
| **UnitName** | This argument is the name of the specific unit in the designated recipe template file that will be used by the function. The **RecipeLoad()** function requires the user to provide the ***UnitName***. The **RecipeSelectUnit()** function returns a value to this argument. The ***UnitName*** can be a string constant or an InTouch tagname that is an I/O or Memory type tagname. |
| **Number** | If a function has to fill an argument with characters, this field sets the maximum string length returned to the argument. In InTouch, string (message) tagnames have a maximum length of 131 characters. Use 131 for this argument unless you have reduced the maximum string length of the InTouch tagname. This argument can be a constant or an InTouch analog tagname. |

# Using Recipe Functions

Recipe functions can be automatically inserted into InTouch QuickScripts.

### To automatically insert a recipe function into a script

1. Open the QuickScript editor, click **Add-ons** or on the **Insert** menu, point to **Functions** then click **Add-ons**. The **Choose function** dialog box appears displaying all the functions for all of the InTouch add-on programs that you have installed.
2. Click the recipe function that you want to insert into your QuickScript. The dialog box will close and the function will be inserted in the script at the cursor position.

For complete details on InTouch QuickScripts see your *InTouch User's Guide*, Chapter 6, "Creating QuickScripts in InTouch."

## Combining Recipe Functions

Multiple recipe functions can be used in the same script. For example, to select and load a recipe with the same push button, the following script would be used:

```
RecipeSelectRecipe("c:\recipefile.csv", RecipeName, 131);
RecipeLoad("c:\recipefile.csv", "Unit1", RecipeName);
```

In the InTouch application window, click on the push button to cause the Select a Recipe dialog to appear. Once a recipe is selected, its name is returned to the tagname RecipeName and the script continues executing and loads the selected RecipeName into the specified Unit Name, Unit1.

For complete details on InTouch QuickScripts see your *InTouch User's Guide*, Chapter 6, "Creating QuickScripts in InTouch."

# Nesting Recipes

Multiple recipe template files can be linked to one another (using InTouch QuickScripts) to create complex applications. This is accomplished by creating recipe template files that define an Ingredient Name that is associated with a message tagname (in the Unit Name) to which another Recipe Name can be loaded. This capability allows you to create master recipe template files that define such things as machine setup parameters to be used by various recipes in different recipe files. Keeping this type of information in one central file greatly reduces the time it takes to maintain and/or update the data whenever it changes.

In the RECFILEA.CSV file sample below, the Item Name, **Setup**, has been defined as a message type and the units contain the message tagname, **Setup**, for this item. Each recipe contains a second recipe name (defined in a different recipe file) that is loaded into the tagname **Setup** when the recipe is selected.

RECFILEA.CSV

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | :Item Name | Item Type | Unit | Unit | Unit | Unit | Recipe | Recipe | Recipe |
| 2 | :Names | | **Review** | Mixer 1 | Mixer 2 | Mixer 3 | Recipe 1 | **Recipe 2** | Recipe 3 |
| 3 | Ing1 | Analog | Ing1 | M1Ing1 | M2Ing1 | M3Ing1 | 11 | 21 | 31 |
| 4 | Ing2 | Analog | Ing2 | M1Ing2 | M2Ing2 | M3Ing2 | 12 | 22 | 99 |
| 5 | Ing3 | Analog | Ing3 | M1Ing3 | M2Ing3 | M3Ing3 | 13 | 23 | 66 |
| 6 | Ing4 | Analog | Ing4 | M1Ing4 | M2Ing4 | M3Ing4 | 14 | 24 | 34 |
| 7 | SP1 | Analog | SP1 | M1SP1 | M2SP1 | M3SP1 | 11 | 21 | 31 |
| 8 | SP2 | Analog | SP2 | M1SP2 | M2SP2 | M3SP2 | 12 | 22 | 32 |
| 9 | SP3 | Analog | SP3 | M1SP3 | M2SP3 | M3SP3 | 13 | 23 | 33 |
| 10 | SP4 | Analog | SP4 | M1SP4 | M2SP4 | M3SP4 | 14 | 24 | 34 |
| 11 | SP5 | Analog | SP5 | M1SP5 | M2SP5 | M3SP5 | 15 | 25 | 35 |
| 12 | **Setup** | Message | **Setup** | LinkFile | LinkFile | LinkFile | Setup2A | **Setup3A** | Setup1A |
| 13 | | | | | | | | | |

To do so, the following script would be entered:

```
RecipeName="Recipe2";
```

```
RecipeLoad("c:\recipe\recfilea.csv", "Review",
   RecipeName);
```

When this script is executed, the value of the tagname Setup becomes Setup3A and is loaded into the **Review** unit. The value of the tagname **Setup** is then used as the Recipe Name in the next recipe loading that loads the machine setup parameters into the tagnames defined for the **PLC1** unit by executing the following script:

```
RecipeLoad("c:\recipe\machine.csv", "PLC1", Setup);
```

MACHINE.CSV

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| 1 | :Item Name | Item Type | Unit | Recipe | Recipe | Recipe | | |
| 2 | :Names | | **PLC1** | Setup1A | Setup2A | **Setup3A** | | |
| 3 | PARM1 | Analog | PARM1 | 11 | 21 | 31 | | |
| 4 | PARM2 | Analog | PARM2 | 12 | 22 | 99 | | |
| 5 | PARM3 | Analog | PARM3 | 13 | 23 | 66 | | |
| 6 | PARM4 | Analog | PARM4 | 14 | 24 | 34 | | |
| 7 | PARM5 | Analog | PARM5 | 11 | 21 | 31 | | |
| 8 | PARM6 | Analog | PARM6 | 12 | 22 | 32 | | |
| 9 | PARM7 | Analog | PARM7 | 13 | 23 | 33 | | |
| 10 | PARM8 | Analog | PARM8 | 14 | 24 | 34 | | |
| 11 | PARM9 | Analog | PARM9 | 15 | 25 | 35 | | |
| 12 | | | | | | | | |

# Applying Security to Recipes

Access to recipes can be controlled by defining an Item Name in the recipe template file that sets the minimum security access level required for you to load, save, delete, etc., a recipe.

In the MACHINE.CSV file sample below, the Item Name, **SecurityLevel**, has been defined as a message type and the **Review** unit contains the message tagname, **SecurityLevel** for this item. Each recipe defines a value that is loaded into the **SecurityLevel** tag when the recipe is loaded into the **Review** unit.

MACHINE.CSV

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 1 | :Item Name | Item Type | Unit | Unit | Recipe | Recipe | Recipe |
| 2 | :Names | | **Review** | PLC1 | Setup1A | Setup2A | **Setup3A** |
| 3 | PARM1 | Analog | | PARM1 | 11 | 21 | 31 |
| 4 | PARM2 | Analog | | PARM2 | 12 | 22 | 99 |
| 5 | PARM3 | Analog | | PARM3 | 13 | 23 | 66 |
| 6 | PARM4 | Analog | | PARM4 | 14 | 24 | 34 |
| 7 | PARM5 | Analog | | PARM5 | 11 | 21 | 31 |
| 8 | PARM6 | Analog | | PARM6 | 12 | 22 | 32 |
| 9 | PARM7 | Analog | | PARM7 | 13 | 23 | 33 |
| 10 | PARM8 | Analog | | PARM8 | 14 | 24 | 34 |
| 11 | PARM9 | Analog | | PARM9 | 15 | 25 | 35 |
| 12 | **SecurityLevel** | Message | **SecurityLevel** | | 2000 | 5000 | **7000** |

If desired, a window containing an "access denied" message can be displayed whenever your security access level is invalid for a selected recipe. To do so, the selected recipe can first be loaded into a unit that contains only an analog tagname to which the selected recipe's security level value is loaded for verification.

For example:

```
RecipeSelectRecipe("c:\recipe\machine.csv",
   "Review", "RecipeName");
```

The **Select a Recipe** dialog box appears. Once you select a Recipe Name, it is returned to the tagname **RecipeName** and the script continues executing.

```
IF SecurityLevel >= $AccessLevel THEN;
   RecipeLoad("c:\recipe\machine.csv", "PLC1"
      "RecipeName");
   ELSE Show "Access Denied";

ENDIF;
```

When this script executes, if your access level is equal to or greater than **7000**, the selected recipe's values would be loaded into **PLC1** unit's tagnames. If not, the window named **Access Denied** is displayed and the recipe is not loaded into **PLC1**.

C H A P T E R 4

# Troubleshooting Recipe Functions

This chapter explains how to troubleshoot Recipe applications using the Error Codes returned by your Recipe function. A list of error codes are included and how to use the **RecipeGetMessage()** function to display the error code message number.

## Contents


- Troubleshooting Functions
- Displaying Error Code Messages


# Troubleshooting Functions

To retrieve the error code of a Recipe Function, it must be equated to an InTouch analog tagname.

Example:

```
ErrorCode = RecipeLoad(FileName, UnitName, RecipeName);
```

The **RecipeLoad()** function will set the value of the tagname **ErrorCode** to **0** if it is successful. If the **RecipeLoad()** fails, it will set the analog tagname, **ErrorCode**, to the number for the specific error condition. The following is a listing of the possible Error Codes and their corresponding error messages and descriptions:

| Value | Error Message | Description |
|---|---|---|
| **0** | **Success** | The called recipe function executed successfully. |
| **-1** | **No Such Recipe Template** | The specified recipe template filename does not exist. |
| **-2** | **View Not Active** | The recipe function called by another program cannot execute because WindowViewer is not running. |
| **-3** | **Out of Memory** | There is not enough memory to complete the current activity. |

| Value | Error Message | Description |
|---|---|---|
| **-4** | **Line too long in recipe template file** | A line in the recipe template file has exceeded the maximum allowed length. |
| **-5** | **Truncated line in the recipe file** | A line in the recipe template file has been truncated. |
| **-6** | **Not a valid recipe template file** | The specified filename is not a valid .CSV recipe template file.<br><br>For more information on .CSV files, see Chapter 2, "Using Recipe Manager." |
| **-7** | **Expecting "unit" or "recipe"** | A unit name or recipe name is missing from the recipe template file.<br><br>For more information on unit or recipe names, see Chapter 2, "Using Recipe Manager." |
| **-8** | **No units defined in recipe template file** | No units have been defined in the recipe template file Units Definition template. |
| **-9** | **Recipe name not found in recipe template file** | The specified recipe name is not defined in the recipe template file. |
| **-10** | **Unit name not found in recipe template file** | The specified unit name is not defined in the unit definition template file |
| **-12** | **Expecting "Analog", "Discrete", "Message"** | An incorrect type has been entered for an item in the recipe template file. Valid types are Analog, Discrete or Message only. |
| **-13** | **Type of tagname mismatches "Analog","Discrete", "Message"** | The tagname specified is incorrect for the item type, e.g., a recipe item is defined as Analog and a message tagname has been defined in the unit for it. |
| **-14** | **Invalid discrete value, expecting "0", "1"** | An incorrect value has been entered for a Discrete in the recipe template file. The only valid values for Discretes are 0 or 1. |
| **-15** | **Unable to open temporary file** | The temporary file cannot be opened; could possibly be due to inadequate disk space. |
| **-16** | **Write error while saving recipe template file** | An error has occurred while saving the recipe template file. |

| Value | Error Message | Description |
|---|---|---|
| **-17** | **User did not select** | The user selected **Cancel** in the **Select a Recipe** dialog box instead of a recipe name. |
| **-19** | **Recipe template in use by another application** | The recipe template file specified is open and, therefore, cannot be accessed by WindowViewer. |

# Displaying Error Code Messages

Each Recipe Function returns a number that represents the error condition for the function. By using the **RecipeGetMessage()** function in an InTouch Data Change script, the corresponding error code can be written to an analog tagname and the associated error code message can be written to a message tagname.

To do so, the following Data Change script would be used:

```
RecipeGetMessage(ErrorCode, ErrorMessage, 131);
```

This script will automatically execute whenever the value of the analog tagname **ErrorCode** changes. When this script executes, the **RecipeGetMessage()** function will read the current numeric value of the tagname **ErrorCode** and return the message associated with that value to the tagname **ErrorMessage**.

CHAPTER 5

# Creating Recipes in Other Windows Applications

The recipe template file is saved in the .CSV (Comma Separated Variable) format. Therefore, it can be created and/or edited in any Windows program that supports the .CSV format such as Microsoft® Excel® and Microsoft® Notepad.

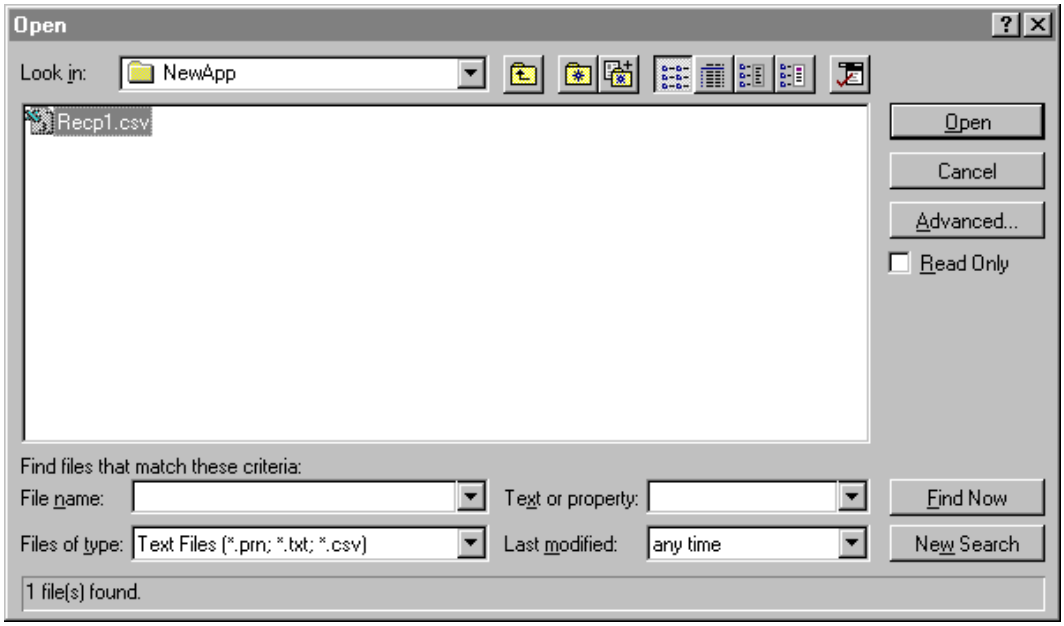
## Contents


- Using Excel with a Recipe Template File
- Using Notepad with a Recipe Template File


# Using Excel with a Recipe Template File

### To open an existing recipe template file in Microsoft Excel

1. Start Excel.
2. On the **File** menu, click **Open**. The **Open** dialog box appears.



3. Locate and select the .csv file then, click **Open** or, double-click the filename. The .csv opens.

Recp1.csv

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | :Ingredient | IngredientT | Unit | Unit | Unit | Recipe | Recipe |
| 2 | :Names | | Review | Mixer1 | Mixer2 | Recipe 1 | Recipe 1 |
| 3 | | | | | | | |
| 4 | Ing1 | Analog | Ing1 | M1Ing1 | M2Ing1 | 21 | 21 |
| 5 | Ing2 | Analog | Ing2 | M1Ing2 | M2Ing2 | 22 | 22 |
| 6 | Ing3 | Analog | Ing3 | M1Ing3 | M2Ing3 | 23 | 23 |
| 7 | Ing4 | Analog | Ing4 | M1Ing4 | M2Ing4 | 24 | 24 |
| 8 | SP1 | Analog | SP1 | M1SP1 | M2SP1 | 21 | |
| 9 | SP2 | Analog | SP2 | M1SP2 | M2SP2 | 22 | |
| 10 | SP3 | Analog | SP3 | M1SP3 | M2SP3 | 23 | |
| 11 | SP4 | Analog | SP4 | M1SP4 | M2SP4 | 24 | |
| 12 | SP5 | Analog | SP5 | M1SP5 | M2SP5 | 25 | |
| 13 | RevDate | Message | Date | | | 7/6/97 15:36 | |
| 14 | Comment | Message | Comment | | | Comment for Recipe 2 | |

Recp1

4. Now you can edit the .csv file.

**Note** The Excel illustrations used in this user's guide were created using Version 7.0. If you are using a different version, your spreadsheets may look slightly different.

### To create a new recipe template file in Excel

1. Start Excel.
2. On the **File** menu, click **New**. The **New** dialog box appears.
3. Click on the workbook icon to open a blank spreadsheet. Enter the data in the spreadsheet.

Book3

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | :IngredientName | IngredientType | Unit | Unit | Unit | Unit | Recipe |
| 2 | :Names | | Review | Mixer 1 | Mixer 2 | Mixer 3 | Recipe 1 |
| 3 | Ing1 | Analog | Ing1 | M1Ing1 | M2Ing1 | M3Ing1 | 11 |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |

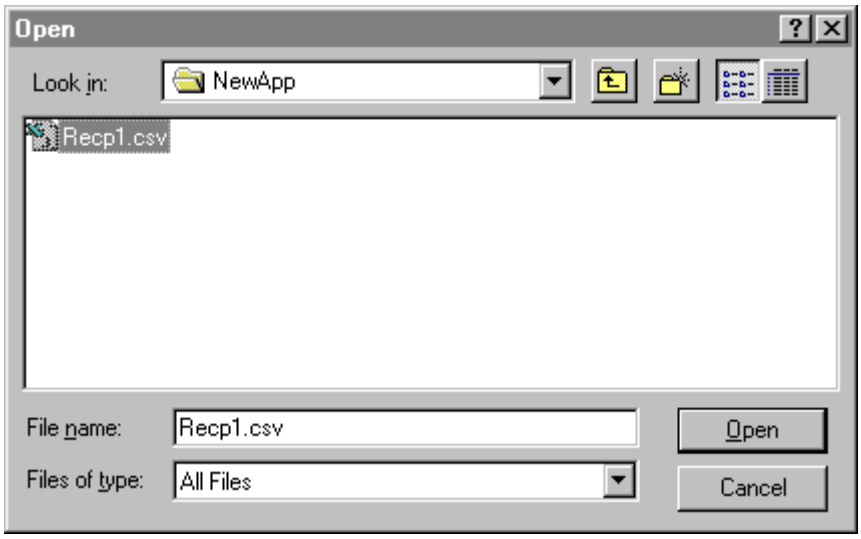
Sheet1 Sheet2 Sheet3 Sheet4 Sheet5

4. The entries must be made in the order shown above. All Unit Names must be defined in the file before the Recipe Names. Once all the required data is entered, the spreadsheet must be saved with the .CSV extension, for example, reclist.csv.

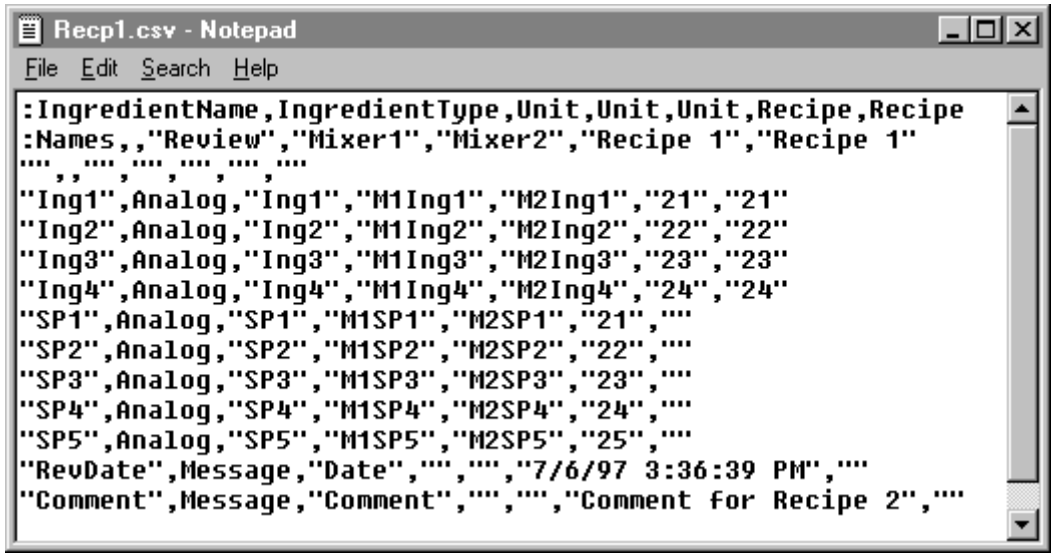
# Using Notepad with a Recipe Template File

### To open an existing recipe template file in Microsoft Notepad

1. Start up Notepad.
2. On the **File** menu, click **Open**. The **Open** dialog box appears.




3. Locate and select the .csv file then, click **Open** or, double-click the filename. The .csv will open.




4. Now you can edit your .csv file.

### To create a new recipe template file in Notepad

1. Start up Notepad.
2. On the **File** menu click **New**.
3. Enter following data in this format:

```
:IngredientName,IngredientType[,Unit]...[,Recipe]...
```

```
:Names,,[,UnitName]...[,RecipeName]...
IngredientName,{Analog,Discrete,Message},[,tagname]...[,value]
```

**Note** All Unit Names must be defined in the file before any Recipe Names are defined.

4. Once the required data is entered, the file must be saved with the .CSV extension.

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